



PROCEEDINGS OF WEBINAR ON MARINE AND LAND-BASED POLLUTION IN THE ARAFURA AND TIMOR SEAS

2021

May 2021

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GENERAL OVERVIEW

Background

The tropical and semi-enclosed Arafura and Timor Seas (ATS) are shared by Australia, Indonesia, Timor-Leste and Papua New Guinea. The ATS region is extremely rich in living and non-living marine resources, including major fisheries and oil and gas reserves. The ATS region is located at the intersection of the two major Large Marine Ecosystems, the Indonesian Seas to the North and Northern Australian waters to the South, and is also an integral part of the Coral Triangle zone considered to have the highest marine biodiversity in the world. The ATS Region exhibits high productivity that sustains both small and large-scale fisheries that provide livelihoods for millions of people in the region. The threats facing the ATS region are transboundary in nature and can only be effectively addressed through multilateral cooperation between all four littoral nations.

Marine and land-based pollution have caused a serious decline in the ATS region. Pollution impacts are largely attributed to poor catchment practices, mining activities, offshore oil and gas exploration and exploitation, and the effects of fisheries, including marine debris, which partly consists of discarded fishing nets and other fishing gear. River system siltation, primarily from deforestation is causing sediment dispersion to inshore coastal marine zones. Fertilizers and pesticides being used on farms within watershed catchments are also carried down to coastal areas, disrupting the nutrient cycle and introducing persistent toxic substances to benthic communities in estuaries and inshore ecosystems, subsequently distressing biodiversity in these areas. Human impacts can be expected to grow significantly with population growth and resultant increases in economic activities in the ATS. Industrial development, tourism, and urbanization can exacerbate the pollution of coastal waters from untreated domestic and industrial waste.

With the objective of reducing marine and land-based pollution, the GEF/UNDP/PEMSEA ATSEA-2 Project has completed a regional analysis of pollution hotspots that will provide a better understanding of the current threats from marine and land-based pollution for the region. The assessment results can be used by decision-makers to prioritize pollution reduction strategies and initiatives.

Objectives

The webinar was used as an avenue:

1. To update key stakeholders in ATS countries on the results of marine and land-based pollution assessment results;
2. To gather inputs and seek advice from key stakeholders on the results of the assessments and follow up on the recommendations.

Time and Location

The webinar was held on 27 May 2021 from 09.00 to 11.00 am Bali time (GMT+8) virtually via Zoom.

Moderator and Speakers



MODERATOR

Swietenia Puspa Lestari, ST
CEO of Divers Clean Action

- Graduated from Environmental Engineering, Institute of Technology Bandung
- Together with thousand volunteers across South East Asian Countries, including Indonesia, combat marine debris issue with various actions, such as research, campaigns and workshops, community development and collaborations with private sector to government
- Top 100 Inspiring & Influential Woman by BBC(2019)
- 30 under 30 Forbes Social Enterprise Asia (2020)



SPEAKER

Dr. Won-Tae Shin
CEO of Global Ocean, Inc

- Master's and PhD Degrees in Environmental Engineering at Georgia Institute of Technology, Atlanta, USA
- Joined PEMSEA as Program Specialist in 2007
- Worked for the Government of RO Korea as Officer at the Ministry of Oceans and Fisheries
- Established consulting firm in RO Korea in 2011 to expanding services to various entities
- ATSEA Project Consultant in marine and land based pollution assesment
- Working on 2 KOICA Project, in Ba Ria-Vung Tau (Vietnam) and Guimaras Province(Phillipines)
- Various projects of international/regional organizations, governments, and research institutes on coastal and ocean issues and management in the East Asian countries since 2011



RESPONDENT

Dr. Abilio da Fonseca
Lecturer on National University of Timor Leste

- UNDP Timor-Leste consultant for Marine- and Land-Based Pollution Study on the southern coast of Timor-Leste
- Strong background in climate change, fisheries, and environmental management and policy
- 30+ years experiences in environment and fisheries projects/issues
- Policy analyst with the government of Timor Leste.
- Also worked extensively on international environmental issues



RESPONDENT

Ir. Dida Migfar Ridha, M.Si

Executive Director of Regional Capacity Center for Clean Seas

- Director of Coastal and Marine Pollution and Degradation Control at Ministry of Environment and Forestry, Republic of Indonesia
- Master in Economics, IPB University
- 27+ years work experiences in environmental sector as government official/policy maker



RESPONDENT

Edelina Melisa, ST, M.Sc

Senior Consultant in Oil Spill Response Limited Singapore

- Professional with 8 years experience in the oil and gas industry
- Strong background in crisis/incident management, emergency preparedness, emergency response, and business continuity management
- Led and delivered various oil spill preparedness projects with extensive field experience gained through responding to various oil spill incidents

Recording of the Webinar

The recording of the webinar is available on Youtube through this link:

<https://youtu.be/qKuS7KvbbRU>

1.0 Opening

Opening Remarks: Dr. Handoko Adi Susanto, Regional Project Manager of ATSEA-2 ([Link to PPT](#))

- 1.1 Dr. Susanto began the speech with deliver appreciation to the speaker and respondents, and also the participants that registered from many countries such USA, Canada, Australia, PNG, Philippines and Indonesia. He briefly introduced the coverage area of the ATSEA-2 Project as well as the sites in 3 beneficiary countries.
- 1.2 Dr. Handoko also explained to the audience about the priority transboundary issues, 3 major components and its outcome. The marine pollution issue is part of Outcome 2.2 which designed to strengthen the enabling condition and capacities to reduce the land-based resource of pollution.
- 1.3 Dr. Handoko introduced Dr. Won Tae Shin as a consultant responsible to undertake the regional assessment in Arafura and Timor Seas and national assessment in Rote Ndao, Indonesia. The project is also planned to develop local pollution prevention and control plans, facilitate oil spill response and preparedness training, and facilitate regional exchange.

2.0 Marine and Land-Based Pollution Assessment in the ATS Region

Speaker: Dr. Won Tae Shin, CEO of Global Ocean Inc ([Link to PPT](#))

- 2.1 Dr. Shin started his presentation with the ATS profile. ATS region is a highly productive marine ecosystem (>300 g C/ m²/yr) which is very important for fishing activity, especially in Indonesia. Yet, the ecosystem is over-exploited and its marine ecosystems are under threat.
- 2.2 The first phase of the Arafura and Timor Seas Ecosystem Action (ATSEA) programme was implemented as part of the GEF/IW portfolio on Large Marine Ecosystem (LME) Projects (e.g. Yellow Sea LME, SCS/Gulf of Thailand LME, Bay of Bengal LME, etc.). The first phase produced a Transboundary Diagnostic Analysis (TDA) in 2011 and Strategic Action Programme (SAP) in 2012. After that GEF secretariat provided more funding for the second phase to support SAP implementation. One of them was to do a marine and land-based pollution hotspot analysis.
- 2.3 Dr. Shin conducted a DPSIR analysis for the study which identified the drivers, pressures, state, impact, and response.

DPSIR Analysis				
Driver	Pressure	State	Impacts	Response
Capture fisheries	Extensive seaweed culture	Derelict fishing gears	Ghost fishing by derelict fishing gears	Awareness building for fishers on marine ecosystem impacts of derelict fishing gears
	Increased capture fisheries	Overfishing	Marine ecosystem degradation by pollutants	Impacts of derelict fishing gears
	Extensive use of fishing gears	IUU fishing	Reduced income of fishers	Aquaculture development for sustainable fisheries
Oil extraction at the platforms in the ATS	Off-shore oil extraction	Oil spillage from fishing boats	Coastal habitats degradation	Oil spill early warning system
	High-vessel traffic for oil transport	Coastal areas including habitats and species under constant threats of oil spill	Reduced coastal economic activities (fisheries)	Oil spill contingency planning
	Pipe connection for oil transport from the platform	High stress for coastal dwellers	Mass mortality of coastal species	ESI Mapping Response and preparedness
Coastal and mining development	Coastal area development for residential and commercial	Habitat destruction along the coastal areas	Loss of habitat for species to nurture and regenerate	Implementing ICM plan and zoning plan
	Mining for minerals and gold	Siltation and chemical run-off	Excessive mud and chemicals polluting coastal areas	Enforcement of laws and regulations on mining operation
Agricultural development	Animal husbandry development	Untreated animal manures running off to coastal areas	Eutrophication of coastal waters	Improved treatment of animal manures at the site
	Plantation on extensive areas for trade crops	Excessive use of chemicals for monocrop plantation	Chemical pollution at the coastal communities	Enforcement of laws and regulations on using chemicals

- 2.4 Based on TDA study in 2011, the main pollution sources were nutrients from agricultural sources, sediments, toxicants, oil spills, marine debris including derelict fishing gears and plastics. However, from the study done by Dr Shin, two major pollution sources at regional scale were identified, i.e. oil spills and marine litter. Oil spill as a regional concern was also confirmed by Rote Ndao residents where a more specific survey was conducted. While other sources such as nutrients, sedimentation from local mining, and toxic substances from agriculture categorized as localized pollution.
- 2.5 Oil and gas exploration in Timor Seas have a long story. It was started in 1979 and more developed in 2000. Dr. Shin showed the map of the oil fields in the Timor Seas and highlighted the three areas which were considered important – Montara, Buffalo, and Greater Sunrise.
- 2.6 Some of the implications of the maritime boundary treaty were:
- More responsibility to Timor-Leste on possible oil spill incidents.
 - Faster development in Greater Sunrise and Buffalo oil fields.
- 2.7 One of the most significant oil spill events was from the Montara rig in 2009. It's about 250 km from Rote Island, and 250 km from the North Australia coast. Oil escaped for about 75 days as much as 300 barrels a day. Dr. Shin showed the map where the oil spread. When the oil spill happened, Oil Spill Limited Response (OSRL) deployed Hercules C-130 to spread dispersants. This event caused Indonesian seaweed farmers to claim damages. But the company, PTTEP, said the oil did not affect the area within Indonesia's boundary. Therefore, they did not pay any compensation to Indonesian farmers. But recently in 2021, an Australian court ordered the company to pay Indonesian farmers compensation. Moreover, some scientific findings showed that Indonesian farmers were affected by the oil spill.
- 2.8 As now the Joint Petroleum Development Area (JPDA) belongs to Timor-Leste, oil development might be accelerating there due to petroleum revenue decrease in Timor-Leste. The area of Greater Sunrise would be developed faster. This means when an oil spill happens the responsibility belongs to Timor-Leste.
- 2.9 Dr. Shin simulated an oil spill incident and showed the most vulnerable areas using General NOAA Operational Modelling Environment (GNOME) with the help of the Korea Environment Institute. The simulation was generated from the Buffalo oil rig in JPDA area and used similar data from the Montara event. Dr. Shin divided the simulation into 4 categories of time in 2018 – January to March, April to June, August to October, and October to November. Mostly the simulation showed that the oil dispersed to the southern coast of Timor Island and Rote Island. Those two areas were considered the most vulnerable to oil spills.
- 2.10 In regards to oil Spill preparedness, response, and cooperation regional cooperation is necessary because all countries in the ATS region have different policies, statuses, and facilities:
- Australia has bilateral cooperation on oil spill response with Indonesia and Timor-Leste. They also have National Marine Oil Spill Contingency Plan (established in 1973) managed by Australian Maritime Safety Authority (AMSA).

- Indonesia has a National Oil Spill Contingency Plan (established in 2006 and launched in 2007). A National Team for Oil Spill Response was established comprising the Directorate General of Mining and Gas and various other government ministries and agencies; now about to ratify the OPRC
- While Timor-Leste and PNG have a long way to go.

2.11 The regional contingency plan is very important to reduce the gap in oil spill governance.

Current sate	Desired State	Gap
Lack of oil spill response materials and capable personnel	Equipment for oil spill preparedness and response should be equipped	Australia is equipped with response material and capacity. Other countries should equip with response resources.
Cooperation arrangements are limited	Regional response cooperation mechanism setup	Regional cooperation mechanism is lacking. Also, joint exercise and training activities should be done regularly.
Ratification of OPRC Convention is limited	All the countries should ratify the OPRC Convention	Only Australia ratified OPRC and OPRC-HNS. Other countries should follow.

- 2.12 Dr. Shin continued his explanation about the second pollution source which was marine debris. There are 2 types of marine debris, i.e. land and sea-based. In the ATS region, the study focused on floating and seafloor debris.
- 2.13 Dr. Shin collected information from each ATS country about the impact of marine debris. All study mostly shows that marine debris will worsen over years ahead. To respond to that, there were many coastal cleanup events in 2020 when the study was conducted, but data collected from coastal cleanup could not be used because it was a one-time event.
- 2.14 Gillnet and trawl were dominantly used in the ATS area and became the main sources of seafloor debris. Based on Global Fishing Watch (GFW) which recorded the AIS and VMS from 2012 to 2020, Aru Sea and around the JPDA were the hotspots of fishing activities in the ATS region which could be identified as potential hotspots for the seafloor debris.
- 2.15 Dr. Shin elaborated on the Environmental Sensitivity Index (ESI) Map to identify priority locations for mobilizing response resources. Based on the physical index, tidal flats, marshes, swamps, and mangroves have the highest vulnerability. While the biological and social index came from the sensitivity of species and if an area is protected or not.
- 2.16 Dr. Shin used ESI to analyze the Rote Ndao area. Based on all data, Dr. Shin chose southern coastal area of Rote Barat Daya and Lobalain as Area 1 or the hotspot and developed its ESI map. The field survey was conducted to gather additional data and information and to understand Rote Ndao residents' perception of pollution. In total, 643 coastal residents were interviewed. From the survey, respondents shared that they felt like land-based pollution was not as serious as marine-based pollution (i.e. marine debris and oil spill). In addition, the residents have high positive awareness of the importance of marine life such as endangered, threatened, and protected species.

- 2.17 To sum up, as an area that is highly productive and rich in resources, the ATS region is under threat of oil spills and marine debris. With the lack of a regional collaborative platform for oil spill response, the countries were recommended to ratify the OPRC 1990, develop a regional platform for oil spill response, and establish a regional monitoring programme on marine debris.

3.0 Comments from Respondents

Respondent 1 – Dr. Abilio da Fonseca

[Link to PPT](#)

- 3.1 Dr. Fonseca acknowledged the effort of how Dr. Shin developed the reports by identifying many evidence, issues, and challenges, but he believed the report could be refined further using the latest information from the country level. For example, Timor-Leste has conducted several activities on marine pollution assessment that could support the regional level.
- 3.2 From current illegal, unreported and unregulated fishing ((IUUF) study, he underscored that IUU fishing also caused marine debris where fishing gear was dumped into the water column intentionally and unintentionally. Dr. Fonseca shared the map from GFW which showed a fishing hotspot on Timor-Leste southern coast that he believed to be a source of marine debris. Between April and May, there were 330 boats from inshore fishery and 30 boats offshore. If Timor-Leste can combat IUUF, Timor-Leste can also reduce the marine debris from fisheries sector.
- 3.3 Other issues related to marine pollution are climate change adaptation and mitigation measures. Timor-Leste produces a very small amount of debris as found during his study. Dr. Fonseca estimated that the rest of the debris came from Indonesia and Australia through currents, winds, sea level rise, and inundation during the wet season. Through climate change mitigation measures, Timor-Leste can reduce sea level rise and inundation coastal erosion, hence the end amount of marine debris can be reduced as well.
- 3.4 In conclusion, Dr. Fonseca agreed that regional cooperation is important.

Respondent 2 – Ir. Dida Mighfar Ridha

[Link to PPT](#)

- 3.5 Mr. Ridha acknowledged the study conducted by Dr. Shin. He agreed that marine pollution is one of the five primary environmental concerns in the ATS region, and the ATS region is being suffocated by pollution, under the threats of oil spills and marine debris, and lack of collaboration regionally. He also agreed to highlight and develop a regional platform for oil spill response and establish a regional monitoring program. Mr. Ridha provided some background policy, internationally and nationally about the importance of having such a regional collaboration. In line with Multilateral Environmental Agreements, UN General Assembly and UNEA resolution were to:
- Effectively apply Ecosystem Based Management.
 - Protect the marine environment from land and sea-based activities.
 - Strengthen capacity for coastal and marine governance.
 - Promote resource efficiency and productivity.
 - Strengthen coordination and capacity for state of marine environment reporting.

- 3.6 Based on those principles, to mitigate the pollution, it was recommended to follow up with stocktaking the modality of the ATS Region, for example:
- Stocktaking is carried out in order to gather information about ongoing and planned activities by stakeholder groups that work with marine litter and microplastics directly and indirectly.
 - Then continue with the stocktaking of existing activities and action towards the long-term elimination of discharges into the oceans to reduce marine pollution.
 - The findings of the stocktaking could be used to assist in building long-term capacity that would allow more strategic engagement in the overall process, including the identification of areas with the greatest transformative potential.
- 3.7 Mr. Ridha then recommended the next step after the stocktaking process is a stepwise approach. The TDA can enhance the capacity building or enabling environment, basic policy, and cooperation framework. After that SAP can strengthen the policy and legal and institutional framework. In the end, we can reach transformational change.
- 3.8 Mr. Ridha also informed how to link the ATS region with Regional Capacity Center For Clean Seas (RC3S) agenda. This RC3S was established in 2019 in order to assure the commitment of the Bali Declaration, as the hub for strengthening capacity building of the marine environment from land-based activities. The RC3S would function to foster linkages to the Regional Seas, other platforms, and international initiatives, and build further on the resolution on the protection of the marine environment from land-based activities at the fourth session of the United Nations Environment Assembly.

Respondent 3 – Ms. Edelina Melisa ST, M.Sc

[Link to PPT](#)

- 3.10 Ms. Melisa presented the best practices for regional collaboration in oil spill preparedness and response. She started by introducing OSRL which was established in 1985, the largest international industry-funded cooperation that provides response and preparedness for oil spill events. The member of OSRL comes from industries or oil companies and government authorities around the world. The OSRL is involved a lot in regional cooperation and collaboration in various capacities.
- 3.11 Mr. Melisa then gave the example of regional collaboration such as Northwest Pacific Action Plan: Marine Environmental Emergency Preparedness and Response Regional Activity Centre (NOWPAP MERRAC), Partnership in Oil Spill Preparedness and Response in the Gulf of Thailand (GoT), Global Initiative South East Asia (GI SEA), and Secretariat of the Pacific Regional Environment Programme Pacific Islands Regional Marine Spill Contingency Plan (SPREP PACPLAN).
- 3.12 NOWPAP for the Protection, Management and Development of the Marine and Coastal Environment of the Region was established in 1994 when China, Republic of Korea, Japan, and Russia has ratified the OPRC 90. One of its Regional Activity Centres (RAC) is MERRAC which is responsible for regional cooperation in the field of marine pollution prevention and response in the Northwest Pacific region and is supported by UNEP and IMO.

- 3.13 Partnership in Oil Spill Preparedness and Response in the GoT (2006) was implemented through Framework Programme for Joint Oil Spill Preparedness and Response in the GOT Supported by PEMSEA. This cooperation aims to enhance national and sub-regional capacities to prevent, control, combat and mitigate marine pollution and to promote technical cooperation and collaboration to safeguard the resources of the Gulf of Thailand.
- 3.14 GISEA was a cooperative led by industry (through IPIECA) and government (through IMO), not like the previous 2 that are fully led by the government. GI SEA assists countries in developing national structures and capabilities for oil spill preparedness and response. In order for regional cooperation to work, they need to ensure that individual country does their homework and build its national capabilities.
- 3.15 The most recent case study, in 2019 there was oil leaked in the Solomon Islands comes from a cargo vessel. The location was near the world's largest raised coral atoll and UNESCO world heritage site. The government requested help from many countries including Australia to cleanup the oil. From this experience the country realized that they need to be more ready, so they pass the bill in the same year, and establish regional oil spill contingency plan (PACPLAN).
- 3.16 The key messages from Ms. Melisa were:
- Importance of national capacities and capabilities as regional cooperation framework is built upon national capacities.
 - Various mechanisms exist for regional collaborations.
 - Regional cooperation and collaboration: managing risks, platform for sharing and learning from each other; countries involved may be at different stages (developing countries, developed countries) as well as different OSPR readiness states.

4.0 Discussion Session

- 4.1 Dr. Shin thanked and responded to points raised by the respondents in his study. He agreed that mentioning IUUF was very important and would include Dr. Fonseca's study in the report. Dr. Shin highlighted that scientific information on Marine Debris was important and one-time data could not represent the whole condition.
- 4.2 Dr. Shin also thanked Mr. Ridha for mentioning stocktaking which is deemed as necessary. To Ms. Melisa, Dr. Shin agreed that GISEA is very important in responding to the oil spill incident. In the ATS region, except Australia, the other ATS countries may lack the capacity to respond to oil spills, hence the need for capacity building.
- 4.3 Discussion highlights from the Q&A session with webinar participants are attached in Annex 3.

5.0 Closing

- 5.1 The webinar was closed by the moderator, Ms. Lestari. She reminded the participants to download the materials from the link provided by the committee and informed the participants about the next ATSEA-2 webinar on Mainstreaming Gender and Social Inclusion in Fishery and Marine in the ATS Region, which would be held on 10 June 2021.

ANNEX 1. ATTENDANCE LIST

No	First Name	Last Name	Country/Region	Institution	Gender
1	Karen	Edyvane	Australia	Charles Darwin University	Female
2	Michael	Mikov	Australia	Independent Consultant	Male
3	Gary	Spiller	Canada	UNDP	Male
4	Adithyar	Rachman	Indonesia	Regional planning and development agency	Male
5	Aditya	Yuniarti	Indonesia	MoEF	Female
6	Afdal Jaya	Laia	Indonesia	BPSPL Pontianak	Male
7	Ahmad	Junaedy	Indonesia	UPT Loka PSPL Sorong, Ditjen PRL, KKP.	Male
8	Ajeng	W	Indonesia	Unpad	Female
9	akhmad	solihin	Indonesia	PKSPL IPB	Male
10	Alfa	Mongi	Indonesia	Independent	Male
11	Alfira	Zakiah Rahman	Indonesia	Universitas Hasanuddin	Female
12	Andreas	Pramudianto	Indonesia	School of Environmental Science Universitas Indonesia (SIL-UI)	Male
13	Anggit Sapta	Raudina	Indonesia	'-	Female
14	Arief Reza	Fahlevi	Indonesia	LPSPL Sorong	Male
15	Ario	Damar	Indonesia	Department of MSP-FPIK-IPB University	Male
16	Aris	Budiarto	Indonesia	MMAF Indonesia	Male
17	Aulia	Sunhandhyka	Indonesia	MOREMEDIA	Male
18	Bayu Vita Indah	Yanti	Indonesia	BBRSEKP	Female
19	Beginer	Subhan	Indonesia	IPB University	Male
20	Budi	Nugraha	Indonesia	Center for Fisheries Research	Male
21	Chaterina Agusta	Paulus	Indonesia	Nusa Cendana University	Female
22	Dadang	Setiawan	Indonesia	UNDP Indonesia	MALE
23	Deny Suhernawan	Yusup	Indonesia	Dept. of Biology, Math and Natural Science Faculty. Univ. of Udayana	Male
24	Deny	Yogaswara	Indonesia	P2O -LIPI	Male

No	First Name	Last Name	Country/Region	Institution	Gender
25	Deselina	Kaleka	Indonesia	Dinas Kelautan dan Perikanan Provinsi NTT	Female
26	Dewi	Larasati	Indonesia	Universitas Gadjah Mada	Female
27	Ditto	Saifullah	Indonesia	Evio Multimedia	Male
28	Domin	Jeronimo	Indonesia	Udayana University	Female
29	Donny	Bessie	Indonesia	Fakultas Perikanan dan Ilmu Kelautan, Universitas Kristen Artha Wacana	Male
30	Dwi Ariyoga	Gautama	Indonesia	UNDP	Male
31	Erick	Nugraha	Indonesia	Politeknik AUP	Male
32	Erika Agustin	Wulandari	Indonesia	Hospital of Madiun Indonesia	Female
33	Erma	Normasari	Indonesia	Undp	Female
34	Erva	Kurniawan	Indonesia	KKP	MALE
35	Femy	Sahami	Indonesia	UNG	Female
36	Galuh	Arum	Indonesia	UCSC	Female
37	Gussasta Levi	Arnenda	Indonesia	LRPT	Male
38	Hafidz Fajar	Maulana	Indonesia	Diponegoro University	Male
39	Hansje	Matakupan	Indonesia	Pattimura University	Male
40	Herdiana	Mutmainah	Indonesia	MMAF	Female
41	I Gst Ngr	Merthawibawa	Indonesia	Association	Male
42	Imam	Kadarisman	Indonesia	Universitas padjadjaran	Male
43	Iswiati	Utamiputeri	Indonesia	Kemenko Marves	Female
44	Ivonne	Rawis	Indonesia	Yayasan ATSEF lestari	Female
45	Iwan	Nirawandi	Indonesia	MOEF	Male
46	Jemmy	Manan	Indonesia	University of Papua	Male
47	Khusnul	Khotimah	Indonesia	Ministry of Marine Affairs and Fisheries	Female
48	Lalu	Solihin	Indonesia	universitas Nusa Bangsa	Male
49	Muhajir, S.Pi, M.Kes	Hajir	Indonesia	Universitas Dr. Soetomo	Male
50	Muhammad	Bibin	Indonesia	UM Sidenreng Rappang	Male

No	First Name	Last Name	Country/Region	Institution	Gender
51	Muhammad	Korebima	Indonesia	Inspiring Development (InDev)	Male
52	Muhammad	Lukman	Indonesia	FAO Indonesia	Male
53	Muralidharan	Chavakat Manghat	Indonesia	FAO	Male
54	Mustika	Firdaus	Indonesia	IPB	Female
55	Nara	Wisesa	Indonesia	WWF Indonesia	Male
56	NEDHY PRISCHILLA	NEONBENI	Indonesia	THE KUAN MNASI FOUNDATION (YKM) NTT	Female
57	Nidzar	Muhammad Rafly	Indonesia	RC3S	Male
58	Niken	Gusmawati	Indonesia	Marine Research Center	Female
59	Niken	Winarsih	Indonesia	Center for Fisheries Research	Female
60	Nur	Habibah	Indonesia	Bogor Agricultural University	Female
61	Nur	Junaidi	Indonesia	UNDP_ ATSEA 2 Regional	Male
62	Nurhayadi	Nurhayadi	Indonesia	CMMAI	Prefer not to say
63	Permana	Yudiarso	Indonesia	BPSPL DENPASAR	Male
64	Putri	Utami	Indonesia	Padjadjaran University	Female
65	RA.Adriani	Kusumawardani	Indonesia	Coordinating Ministry of Maritime Affairs and Investment of the Republic of indonesia	Female
66	Rafella Dorcas Dyah	Magdhalena	Indonesia	BKKPN Kupang	Female
67	Ria	Faizah	Indonesia	Center for Fisheries Research	Female
68	Rinto	Suncoko	Indonesia	Sekolah Lapang Masyarakat Adat	Male
69	Stefanie Jessica	Henny Larasati	Indonesia	Satya Wacana Christian University	Female
70	Suryo	Kusumo	Indonesia	Lab SESO IPB University	Male
71	Susetiono	Susetiono	Indonesia	Research Centre for Oceanography, LIPI	MALE
72	Susi	Sumaryati	Indonesia	Ministry of Environment &	Female

No	First Name	Last Name	Country/Region	Institution	Gender
				Forestry-Karimunjava National Park	
73	Sutriyono	PSDI	Indonesia	Ministry of Marine Affairs and Fisheries	Male
74	Titin	Herawati	Indonesia	Universitas Padjadjaran	Female
75	Tommy	Hermawan	Indonesia	Bappenas	Male
76	Widya	Suryaningsih	Indonesia	RC3S	Female
77	Yeti	Darmayati	Indonesia	Indonesian Institute of Sciences	Female
78	Yuliadi	Kadarmo	Indonesia	MMAF	Male
79	Zainal	Arifin	Indonesia	Indonesian Institute of Sciences	Male
80	Zulkifli	Henan	Indonesia	Department Marine Affair and Fisheries West Papua Agency	Male
81	Adinda Widia	Putri	Indonesia	Freelance	Female
82	andhi	wahyudi	Indonesia	MAPALASKA	Male
83	Anggreini D.N.	Rupidara	Indonesia	Artha Wacana Christian University	Female
84	Arief	Wujdi	Indonesia	LRPT	Male
85	Basuki	Rachmad	Indonesia	Jakarta Technical University of Fisheries	Male
86	Bernadus Suban Roga	Suban Roga	Indonesia	UNDP	Male
87	Christian	Handayani	Indonesia	Atsea-2	Female
88	Dian	Aliviyanti	Indonesia	Universitas Brawijaya	Female
89	Dian Sari	Maisaroh	Indonesia	UIN Sunan Ampel Surabaya	Female
90	Dwi Aryo	Tjiptohandono	Indonesia	ATSEA-2	Male
91	Fitriyah	Irmawati	Indonesia	Papua University	Female
92	Hatim	Albasri	Indonesia	Center for Fisheries Research	Male
93	Hedhi Sugrito	Kuncoro	Indonesia	KKP	Male
94	Heny	Setyorini	Indonesia	Institut Teknologi Yogyakarta	Female
95	I Ketut Aditya Laharjana	Laharjana	Indonesia	Regional Capacity Center for Clean Seas	Male
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98	Julham Mochtar Sabit	Pelupessy	Indonesia	Ministry of Marine Affairs and Fisheries	Male
99	Kamaruddin	Azis	Indonesia	GEF FAO ISLME Project	Male
100	Ketut Gede	Dharma Putra	Indonesia	ICM Learning Center Bali Indonesia	Male
101	Lumban Nauli Lumban	Toruan	Indonesia	Nusa Cendana University	Male
102	M Arsyad	Al Amin	Indonesia	CCMRS IPB University	Male
103	Mohamad Saeful	Hidayat	Indonesia	IPB University	Male
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105	Nurliah	Buhari	Indonesia	Mataram university	Female
106	Obdulia Pratiwi	Nugrahani	Indonesia	KKP	Female
107	Ray	Purnama	Indonesia	Department of Maritime Affairs and Fisheries	Male
108	Regina	M	Indonesia	KKP	Female
109	Ririn	Widiastutik	Indonesia	KKP	Female
110	Rizki	Ningsih	Indonesia	Syah Kuala University	Female
111	Roy	Kurniawan	Indonesia	Research Institute for Tuna Fisheries	Male
112	Sahrul	Aksa	Indonesia	Indonesia Badra Utama Foundation	Male
113	Samuel Leivy	Opa	Indonesia	Youth Maritime Manado City	Male
114	Suharyanto	Suharyanto	Indonesia	Jakarta Technical Fisheries University	Male
115	Tiara	Dwi Prameswari	Indonesia	Politeknik AUP jakarta	Female
116	Tuti	Wahyuni	Indonesia	Ministry of Marine Affairs and Fisheries	Female
117	Widyaani	Widyaani	Indonesia	Universitas Hasanuddin	Female
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121	Linda	Kapus-Barae	Papua New Guinea	UNDP PNG	Female
122	David	Mitchell	Papua New Guinea	Eco Custodian Advocates	Male
123	John	Poulsen	Papua New Guinea	UNDP	Male
124	Cristine Ingrid	Narcise	Philippines	ATSEA-2 RPMU/PEMSEA	Female
125	Kate	Aguiling	Philippines	RPMU	Female
126	Thea Arcella	Bohol	Philippines	PEMSEA	Female
127	Emmanuel	Onsay	Philippines	Partido State University	Male
128	Richelle Marie	Legaspi	Philippines	University of the Philippines Los Baños	Female
129	James	Tan	Singapore	Oil Spill Response Limited	Male
130	Jeffrey	Leng	Singapore	Oil Spill Response Limited	Male
131	Lih Hern	Yow	Singapore	Oil Spill Response Limited	Male
132	Nai Ming	Lee	Singapore	IMO-IPIECA Global Initiative for Southeast Asia	Male
133	Samantha	Chong	Singapore	Oil Spill Response Limited	Female
134	Xin	Dong	Singapore	Oil Spill Response Limited	Female
135	Siau Li	Lau	Singapore	Oil Spill Response Limited	Female
136	Alda	da Rosa	Timor-Leste	Ministry of Agriculture and Fisheries	Female
137	Almerindo Oliveira	da Silva	Timor-Leste	UNDP	Male
138	Artur Maria	Pereira	Timor-Leste	Ministry Agriculture and Fisheries	Male
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140	Delio	Da Costa	Timor-Leste	Ministry of Agriculture and	Male

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142	Alexander	Khan	USA	Universitas Padjadjaran	Male
143	Ana	Rojayati	USA	KKP	Female
144	Isty	Angrelina	USA	IPB University	Female
145	Joana	Belo	USA	FAO	Female
146	Muhammad Zakiy	Abrori	USA	Politeknik Kelautan dan Perikanan Sorong	Male
147	Norman	Ramos	USA	OSRL	Male
148	Ir.Arthur	Brown.MSi	USA	Riau University	Male

ANNEX 2. DOCUMENTATION

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Oil Spill Preparedness, Response and Cooperation

Oil spill related IMO Conventions

Country	OPRC	OPRC-HNS
Australia	✓	✓
Indonesia	Not yet	Not yet
Papua New Guinea	Not yet	Not yet
Timor Leste	Not yet	Not yet

- ❖ Australia
 - Bilateral cooperation on oil spill response with Indonesia and Timor Leste
 - National Marine Oil Spill Contingency Plan (established in 1973) managed by AMSA
- ❖ Indonesia
 - National Oil Spill Contingency Plan (established in 2006 and launched in 2007)
 - A National Team for Oil Spill Response has been established comprising the Directorate General of Mining and Gas and various other government ministries and agencies
 - About to ratify the OPRC
- ❖ Timor Leste and Papua New Guinea have a long way to go...
 - Regional cooperation is necessary due to limited resources.

Division of responsibility (Source: National Marine Oil Spill Contingency Plan, AMSA)

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Sources of marine debris from the offshore fishery (IUU), offshore fishing boats in Timor-Leste

[EEZ and JPDA waters (IUU) (15 April to 20 May 2020 (more than 30 boats))]

Source: <https://globalfishingwatch.org/map/?locale=en>

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WEBINAR ON MARINE AND LAND BASED POLLUTION IN THE ARAFURA AND TIMOR SEAS REGION

Thursday
27.05.2021

Operator

ANNEX 3. DISCUSSION HIGHLIGHTS

1. Question: Good study. Good account of oil spill pollution and marine debris. Why are nutrient pollution and industrial pollution not addressed sufficiently in this study?

Answer:

Dr. Shin: This study focuses mainly on the key transboundary issues (i.e. oil spill and marine litter). It is very active because fishing is a very important source of pollution. Pollution from nutrients and agricultural pollutants are considered local sources.

2. Consistent monitoring is challenging here. Is there any simple, robust monitoring method so that the process can be adopted and conducted by communities, local activists or students?

Answers:

Dr. Shin: I don't know what is the challenge in mobilizing people, I believe that mobilizing NGOs and local residents for monitoring marine litter is quite efficient and effective. In Rote Ndao, local residents have awareness of the marine environment so I think they are willing to participate in monitoring r

Mr. Ridha: This is an interesting question on how to develop a monitoring program for marine litter. Based on our experience, we had a capacity-building program under Regional Capacity Center for Clean Seas, in cooperation with UNEP and CSIRO that was conducted in 2019. We collected information from countries in East Asia. In line with that, comparing the monitoring result is important but the challenge is how to continue the program in each country. Therefore, the important thing is to build capacity. Another issue in the ATS region is the availability of monitoring guidance. That is why it is better to focus on oil spills and marine litter. This is an important process for cooperation in the ATS region to focus on both issues not only the technical process, but also the decision process. Regional cooperation must be in line with national action.

3. My question is regarding the transboundary issues of oil spills, how to collaborate not just among countries but also with the oil companies?

Answers:

Dr. Shin: That is the responsibility of the Oil Company, so they have to mobilize and collaborate with other countries to clean up the oil spill and the government also has the capacity to handle the oil spill.

Ms. Melisa: I would like to highlight more collaboration and a lot of cooperation between government to government. In addition, there are global initiatives in Asia, Africa, Mediterranean region, etc. Their mission is quite similar, they assist to work together with the industry and also the government to develop the national structure and capability.

4. Most districts and provinces have included SDGs in their development planning. However, in the process of implementation SDGs are mostly abandoned. Do you think the central government has to develop strong monitoring and surveillance tools to make sure the points of SDGs can be implemented well? And what kind of tools do you think are most effective?

Answers:

Mr. Ridha: I think the monitoring of the implementation of SDGs, especially SDG 14 for marine pollution is an ongoing activity, how to accelerate the activities? How to monitor? This is our strategy to put the SDGs target in the national and regional planning. This is

important because the document is a global commitment not only at national or provincial levels.

Dr. Shin: There are two main reasons. First is the lack of natural resources and second is the lack of human resources.

5. Question: in a perception survey there are contrary results about people's perception of marine pollution at the sea. People mostly say that land pollution is a problem but sea pollution is not a problem. Why do you think their perception differs from the condition in the field? What is the best solution to change their perception of marine pollution condition recently based on your survey results?

Answer:

Dr Shin: The survey was conducted on the coastal residents of Rote Ndao Regency whom were mostly affected by Montara Oil Spill Incidents so they are more concerned about sea-based pollution than others. This is a specific area-based survey so there might be contrary results. You may treat this as a special case.

Question and Answer in the Chat Box

6. Question: regarding the transboundary issues of oil spill, how to best collaborate not only among countries but also with the oil company?

Answer:

Dr. Shin: The oil company gets permit from the government. The government should require response capacity. So it is the government's responsibility to check the company.

7. Question: How to build national capabilities & capacities and join the training & exercise in MERRAC program/GI SEA for ASEAN countries to investigate oil spill in coastal & marine areas? Because oil spill cases happened in Asean countries but they leaked for investigate the case. Check this statement please.

Answer:

Ms. Melisa: Ideally, the starting point can be first ratifying and implementing the international convention on oil spill (OPRC 90) - which provides the framework on how a country can build their capabilities (national plan, appoint focal point, mechanism for mutual aid, etc.). This will outline a requirement for each country to continuously build their capacity through training and exercise (inc. joint training and exercise), and utilise the existing platform to achieve these. Other than GISEA, there are other bilateral or subregional cooperations that I didn't mention in the presentation

8. Question: I have a question for Dr. Shin, according to your experience in Korea, how long the impact of oil spill will last? So that, how long should we monitor the environment have been affected by oil spill. I had a chance to take some sediment samples from Kupang and North Rote coast in 2017 and we could still observe dead mangrove forest and remaining oil in the sediment beach at that time.

Answers:

Dr. Shin: the aftermath of an oil spill lasts a very long time depending on the cleaning efforts and situation. From Hebei spirit case in Korea in 2007, the damage has been significantly lessened due to heavily mobilized volunteers. So, it depends on the efforts to clean up.

Ms. Melisa: just to add on, the impact can last for a very long time, depending on the type & volume of oil spill, and also the characteristic of the environment impacted. As an example

of the BP Macondo spill in 2010, the impact monitoring is still ongoing now (more than 10 years later).

9. Question: Please Dr. Won, how is the handling of cases of coastal and marine pollution in Papua New Guinea and Timor-Leste? In Indonesia, we already have cross-ministerial coordination and also with local governments at the scene of the incident and handling of cases which also involves legal aspects

Answer:

Dr Shin: handling pollution in Papua New Guinea and Timor-Leste is challenging. Simply because of a lack of resources and awareness of issues. We need to take step by step to raise awareness and mobilize resources as well as build capacity. This is very challenging.



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